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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,577	08/22/2006	Adam Robert Margetts	PU040062	8670

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EXAMINER

GUARINO, RAHEL

ART UNIT	PAPER NUMBER
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2611

MAIL DATE	DELIVERY MODE
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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/590,577	Applicant(s) MARGETTS ET AL.	
	Examiner Rahel Guarino	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims **1 and 6** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. The term “**pre-specified threshold**” is not defined by the **claim 1**, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

4. The term “**pre-specified threshold**” is not defined by the **claim 6**, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1,5,6,10 are rejected under 35 U.S.C. 102(b) as being anticipated by Liang et al. US 2003/0133424

Re claim 1, Liang discloses a hybrid rake/equalizer receiver for correlating a delay spread in a spread spectrum system (fig.5), comprising:
a plurality of adaptive equalizers (508A, 508B, 508C), each for filtering different regions (para#19 lines 34-41) of the delay spread that have an energy level above a pre-specified threshold to respectively provide equalized-descrambled chip sequences for correlation (para#60 and 67, the time delays of the strongest resolved rays are used to determine reference timings for the SE (0),SE(1)), wherein equalizer coefficients respectively corresponding to the plurality of adaptive equalizers are updated individually (para#47 and equation 4).

Re claim 5, the hybrid rake/equalizer receiver of claim 1, wherein the spread spectrum system is a Wideband Code Division Multiple Access (WCDMA) system (para#2).

Re claim 6, Liang discloses in a spread spectrum receiver a method for correlating a delay spread (fig.5), comprising the steps of:

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respectively allocating each of a plurality of adaptive equalizers (508A, 508B, 508C) to different regions in the delay spread that exceed a pre-specified threshold energy level to filter the different regions so as to provide equalized-descrambled chip sequences there from (para#60 and 67, the time delays of the strongest resolved rays are used to determine reference timings for the SE (0),SE(1)); and individually updating equalizer coefficients respectively corresponding to the plurality of adaptive equalizers(para#47 and equation 4).

Re claim 10, the method of claim 6, wherein the spread spectrum system is a Wideband Code Division Multiple Access (WCDMA) system (para#2).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2-4,7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liang et al. US 2003/0133424 in view of Wang et al. US 6,714,585

Re claim 2, the hybrid rake/equalizer receiver of claim 1 does not teach further comprising a correlation module for correlating the equalized-descrambled chip sequences to a short spreading code to provide correlated outputs, for weighting the

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correlated outputs to produce weighted-correlated outputs, and for summing the weighted-correlated outputs to produce a bit estimate of an original non-spread bit stream corresponding to the delay spread.

However, Wang discloses a correlation module (correlation unit (410)) for correlating the equalized-descrambled chip sequences to a short spreading code to provide correlated outputs (col. 12 lines 5-9), for weighting the correlated outputs to produce weighted-correlated outputs (420; col. 7 lines 51-63), and for summing the weighted-correlated outputs to produce a bit estimate of an original non-spread bit stream corresponding to the delay spread (col. 13 lines 22-25).

Therefore, taking the combined teaching of Wang and Liang as a whole would have been rendered obvious to one skilled in the art to modify Liang to utilize a correlation module for correlating the equalized-descrambled chip sequences to a short spreading code to provide correlated outputs, for weighting the correlated outputs to produce weighted-correlated outputs, and for summing the weighted-correlated outputs to produce a bit estimate of an original non-spread bit stream corresponding to the delay spread for the benefit of recovering information represented by a spread spectrum signal that can compensate from other spread spectrum signals transmitted (col. 3 lines 49-53) .

Re claim 3, the modified invention as claimed in claim 2, wherein the correlation module weights the correlated outputs according to how much energy is respectively present in the different regions of the delay spread such that the different regions having low energy are given a lower weight than the different regions having high energy

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(col. 8 lines 23-40, Wang).

Re claim 4, the modified invention as claimed in claim 2, wherein the correlation module performs trivial weighting on the correlated outputs (col. 12 lines 5-9, Wang).

Re claim 7, the method claim 6 does not teach further comprising correlating the equalized-descrambled chip sequences to a short spreading code to provide correlated outputs, assigning weighting to the correlated outputs to produce weighted-correlated outputs, and summing the weighted-correlated outputs to produce a bit estimate of an original non-spread bit stream corresponding to the delay spread.

However, Wang discloses correlating (correlation unit (410)) the equalized-descrambled chip sequences to a short spreading code to provide correlated outputs (col. 12 lines 5-9), assigning weighting the correlated outputs to produce weighted-correlated outputs (420; col. 7 lines 51-63), and summing the weighted-correlated outputs to produce a bit estimate of an original non-spread bit stream corresponding to the delay spread (col. 13 lines 22-25).

Therefore, taking the combined teaching of Wang and Liang as a whole would have been rendered obvious to one skilled in the art to modify Liang to utilize correlating the equalized-descrambled chip sequences to a short spreading code to provide correlated outputs, assigning weighting to the correlated outputs to produce weighted-correlated outputs, and summing the weighted-correlated outputs to produce a bit estimate of an original non-spread bit stream corresponding to the delay spread for the benefit of recovering information represented by a spread spectrum signal that can compensate from other spread spectrum signals transmitted (col. 3 lines 49-53) .

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Re claim 8, the modified invention as claimed in claim 7, wherein assigning steps assigns the weights the correlated outputs according to how much energy is respectively present in the different regions of the delay spread such that the different regions having low energy are given a lower weight than the different regions having high energy (col. 8 lines 23-40, Wang).

Re claim 9, the modified invention as claimed in claim 7, wherein assigning steps assigns trivial weighting on the correlated outputs (col. 12 lines 5-9, Wang).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rahel Guarino whose telephone number is (571)270-1198. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Payne David can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rahel Guarino/
Examiner, Art Unit 2611

/David C. Payne/

Supervisory Patent Examiner, Art Unit 2611